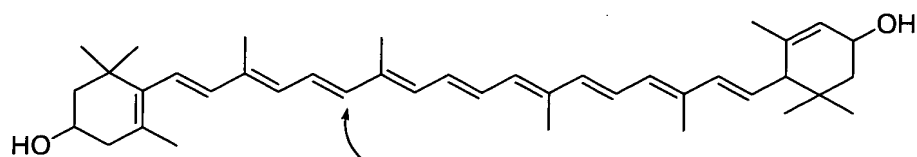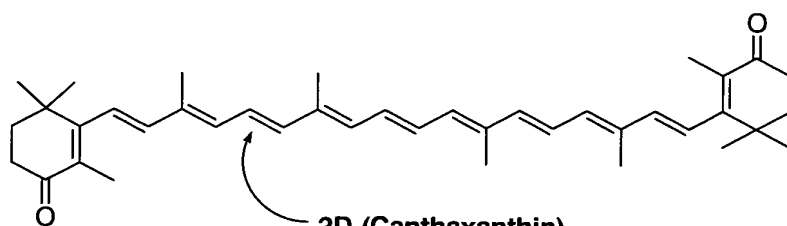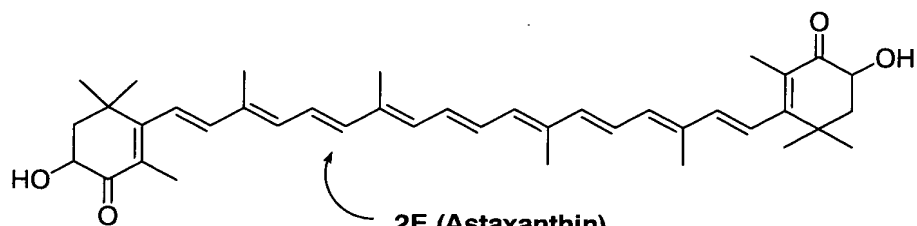2A (Beta-carotene)

2B (Lutein)
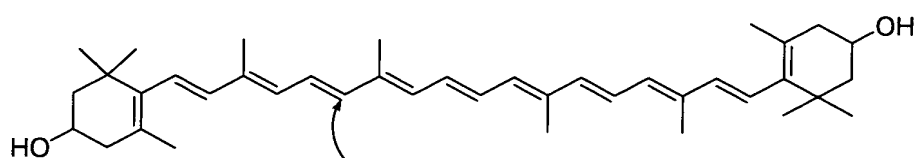
2C Zeaxanthin

2D (Canthaxanthin)

2E (Astaxanthin)

Fig 1

Fig. 2

Control

0.01μm

0.02μm

3413   3488   3563

Magnetic Field (Gauss)

Fig. 3

Infarct Size / Area at Risk

- 70%
- 60%
- 50%
- 40%
- 30%
- 20%
- 10%
- 0%

63.1%

35.1%

- ■ Control: 63.1 +/- 2.5 (vehicle, N=3) in controls
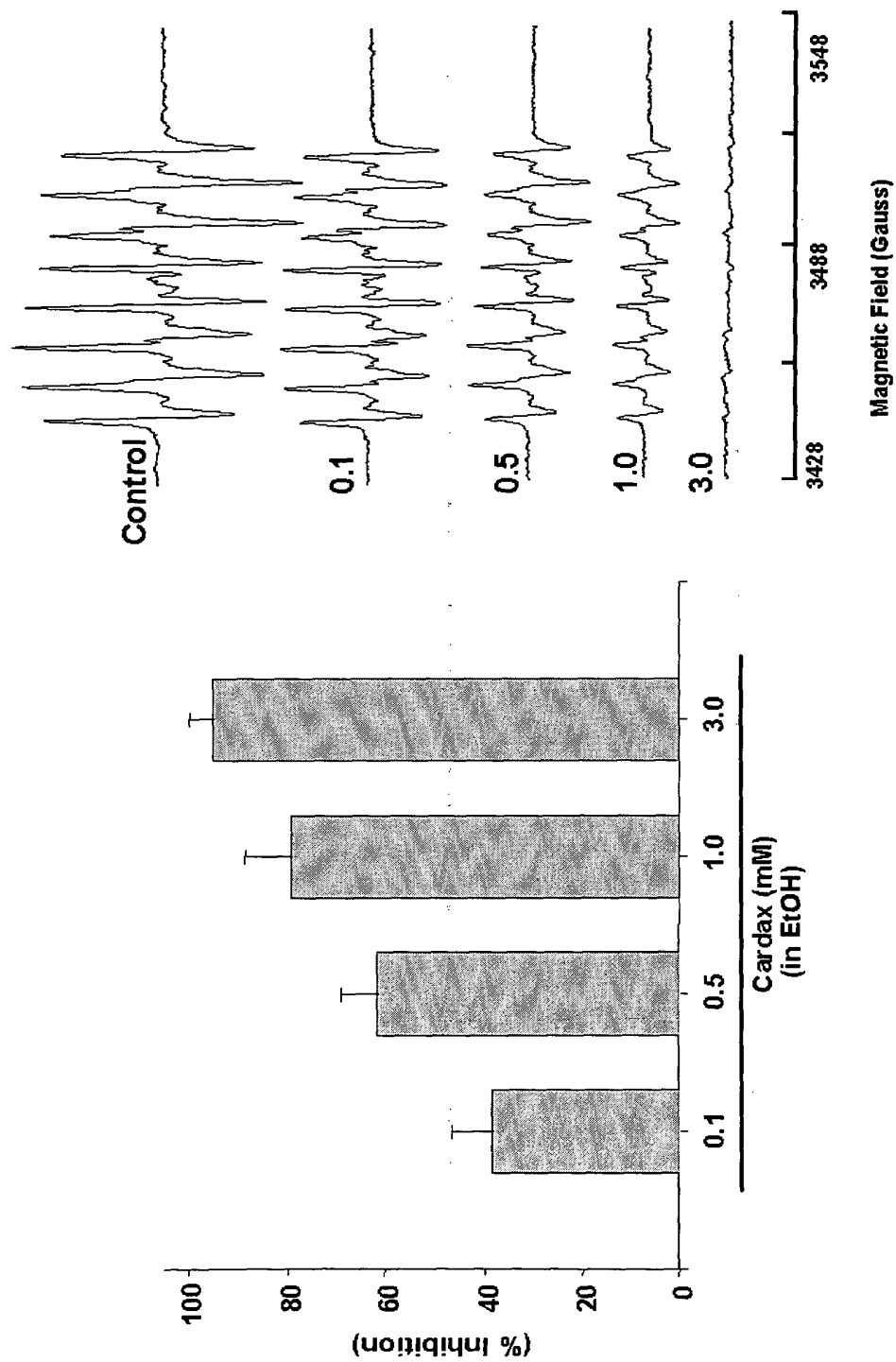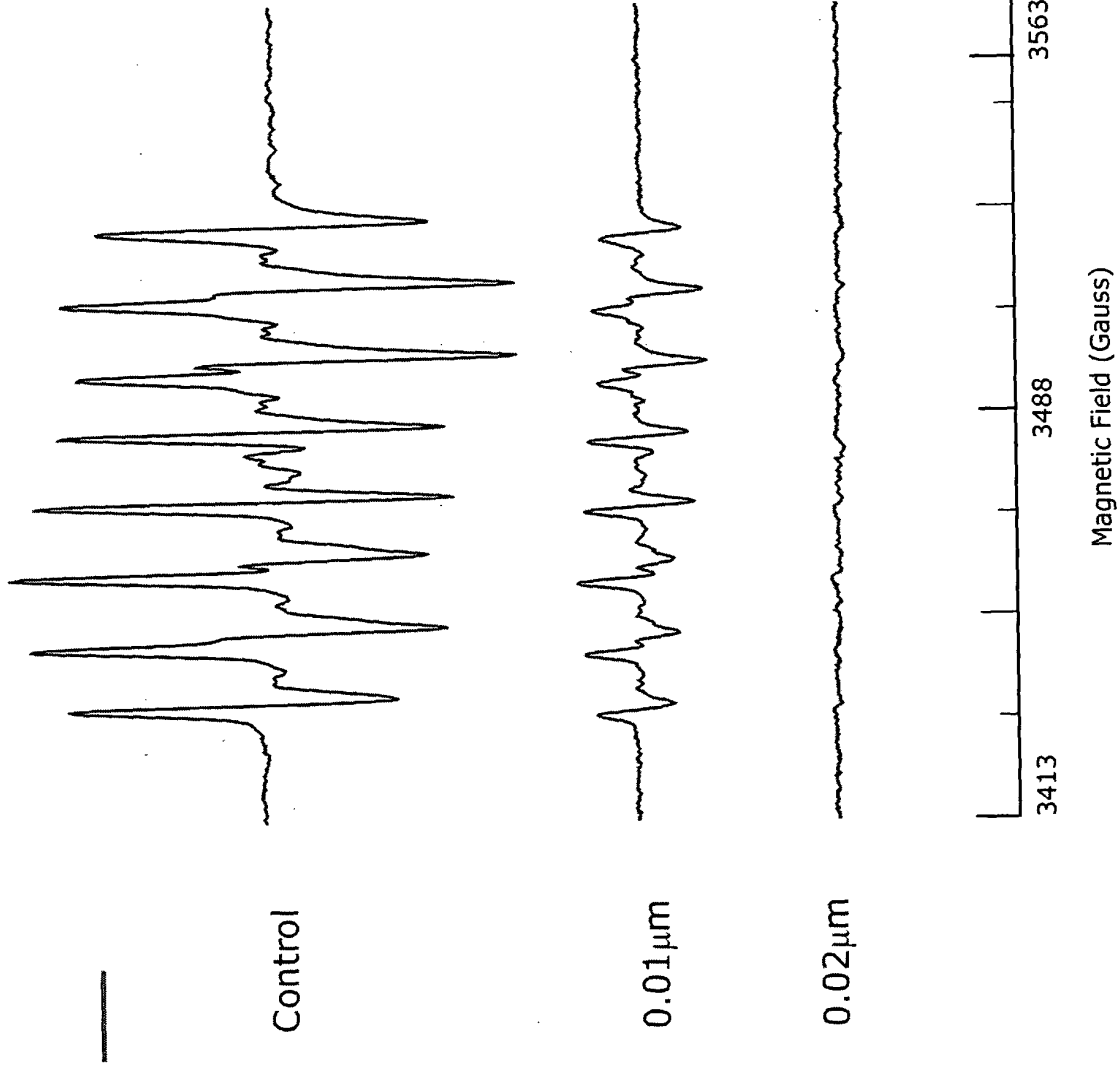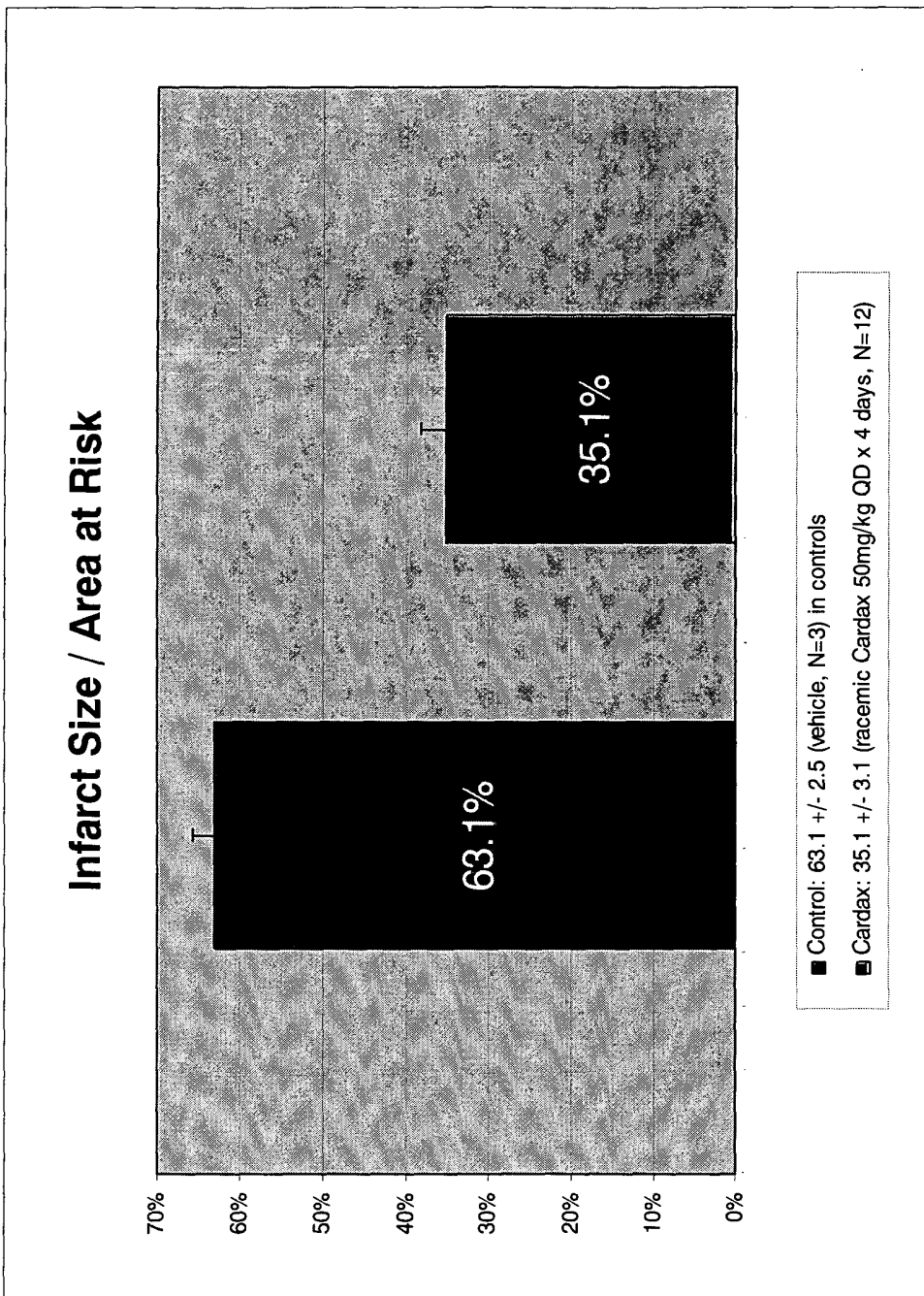- ■ Cardax: 35.1 +/- 3.1 (racemic Cardax 50mg/kg QD x 4 days, N=12)

Mean reduction in infarct size = 44% (P* = 0.01, unpaired *t* test).

Fig. 4
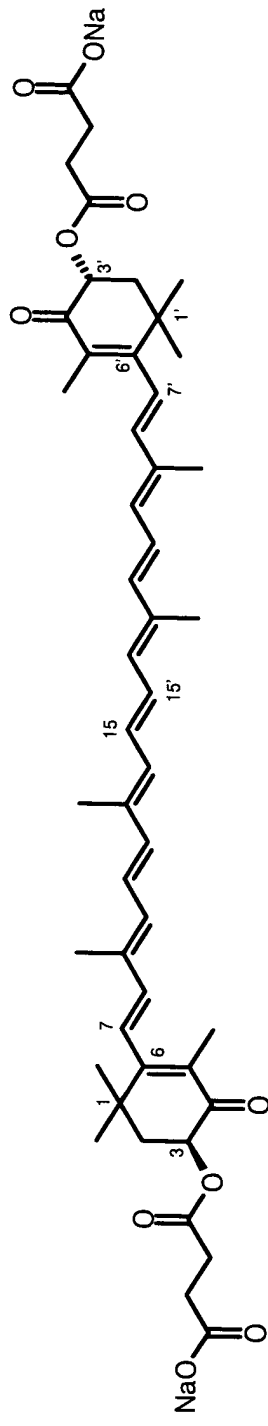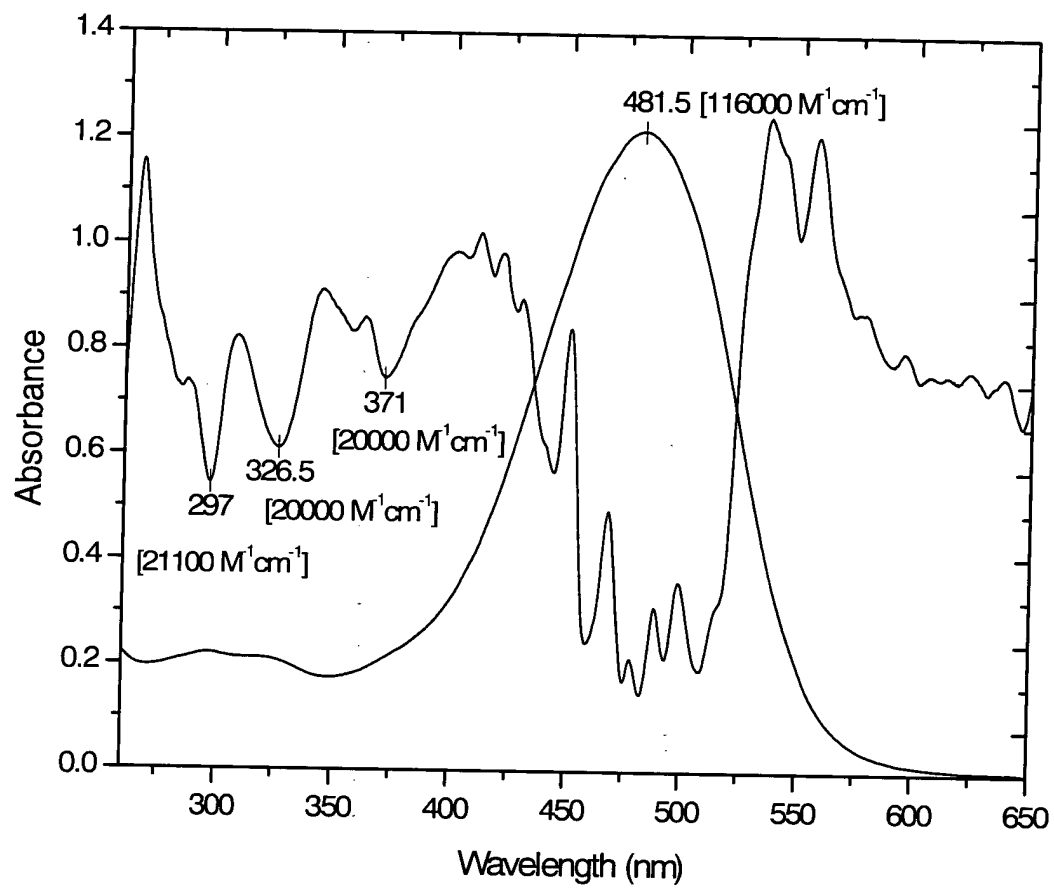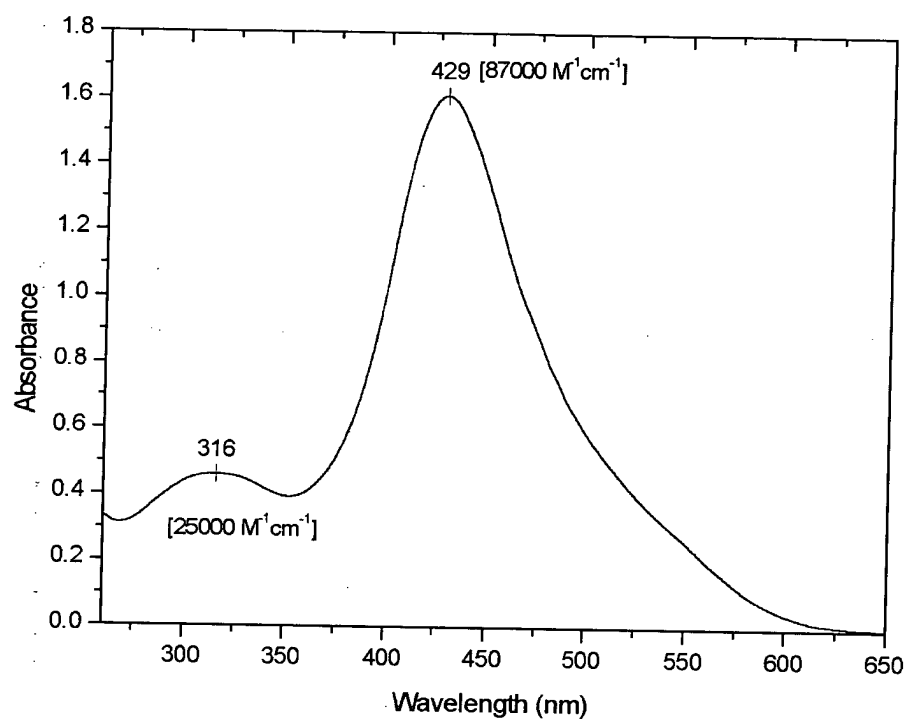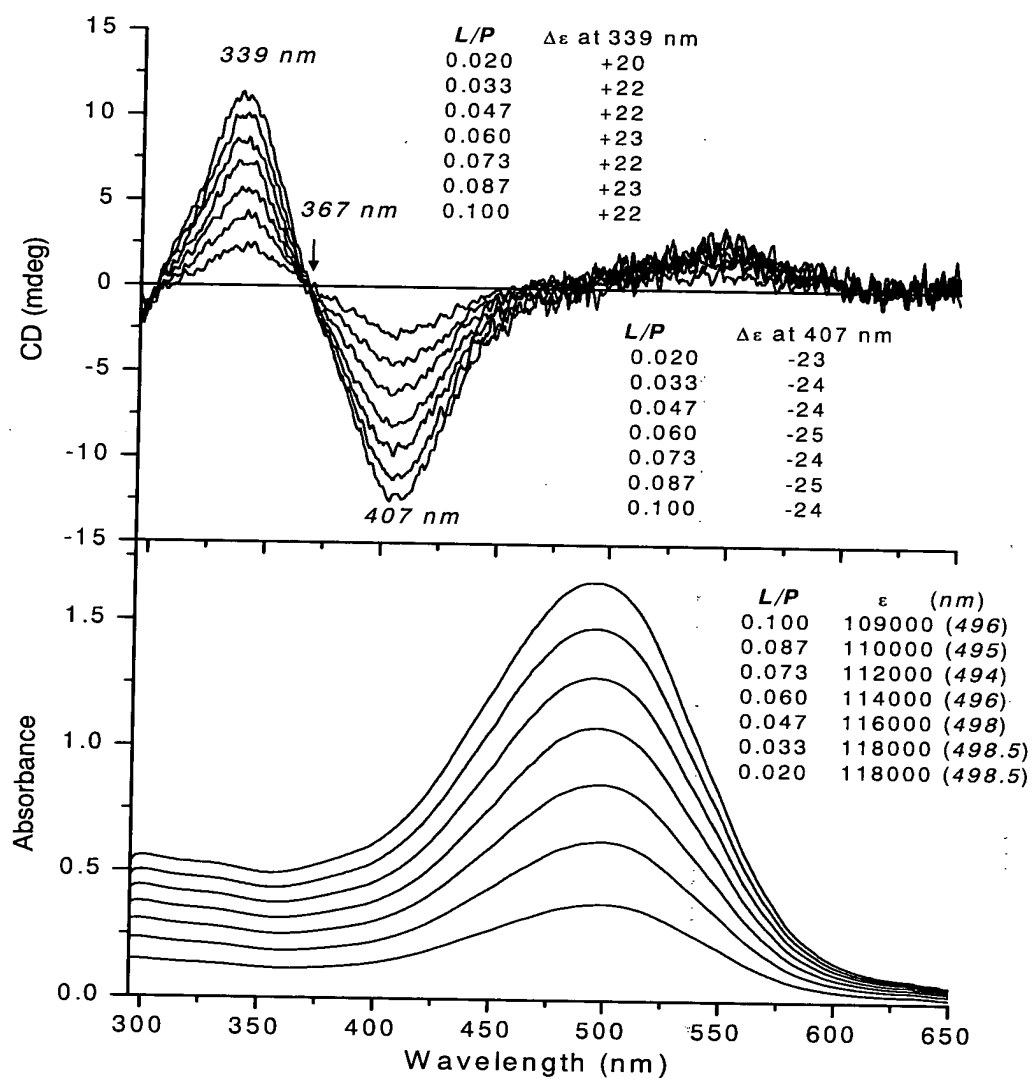
Fig. 5

Fig. 6

Fig. 7

Fig. 8

L/P	Δε	(nm)
7.4	+10	480.5
5.7	+11	482
4.1	+11	485.5
2.9	+11	490.5
2.0	+10	499
1.2	+10	509.5

L/P	Δε	(nm)
1.2	-11	412
2.0	-11	419
2.9	-13	417.5
4.1	-15	417
5.7	-15	415
7.4	-14	414.5

L/P	ε	(nm)
7.4	85000	434.5
5.7	84000	436
4.1	83000	437
2.9	83000	438
2.0	84000	439
1.2	83000	439.5

Fig. 9

L/P	Δε	(nm)
13.1	+55	478.5
10.6	+54	480
9.0	+51	481.5
7.4	+46	484.5
5.7	+39	485
4.1	+30	490
2.9	+22	495.5
2.0	+16	501

L/P	Δε	(nm)
2.0	-14	414.5
2.9	-31	433
4.1	-38	429.5
5.7	-47	429.5
7.4	-54	428.5
9.0	-58	425.5
10.6	-61	425.5
13.1	-62	425

L/P	ε	(nm)
13.1	77000	445.5
10.6	77000	447.5
9.0	77000	449.5
7.4	78000	451.5
5.7	79000	455
4.1	80000	460
2.9	84000	473.5
2.0	87000	480

Fig. 10

Fig. 11

Fig. 12

Fig. 13

Fig. 14

Fig. 15

Fig. 16

3R,3R disodium salt disuccinate
astaxanthin derivative

3S,3S disodium salt disuccinate
astaxanthin derivative

3R,3S disodium salt disuccinate
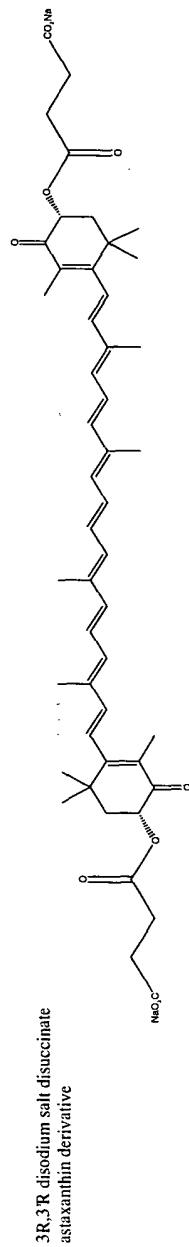astaxanthin derivative

3S,3R disodium salt disuccinate
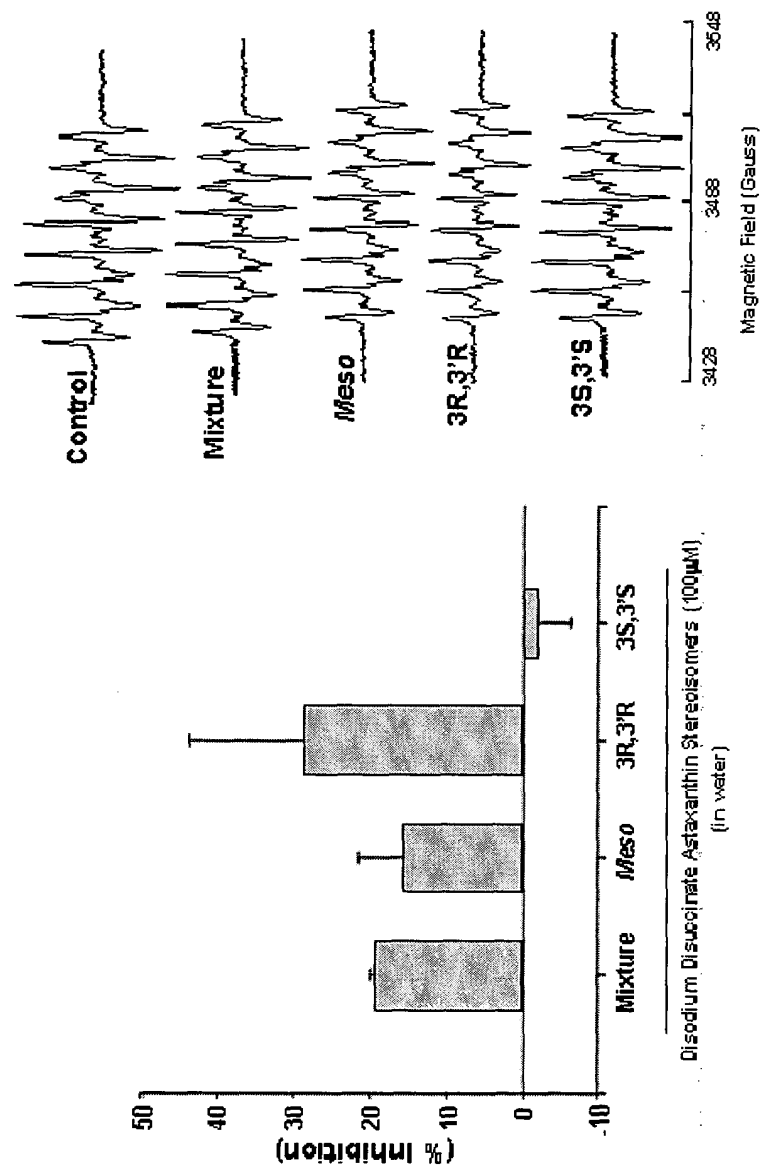astaxanthin derivative
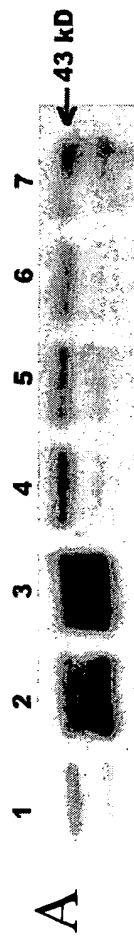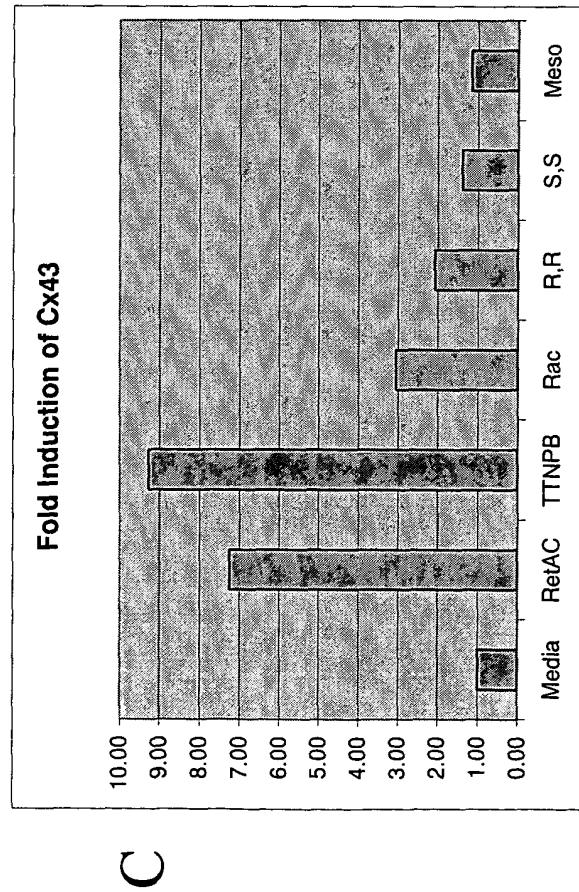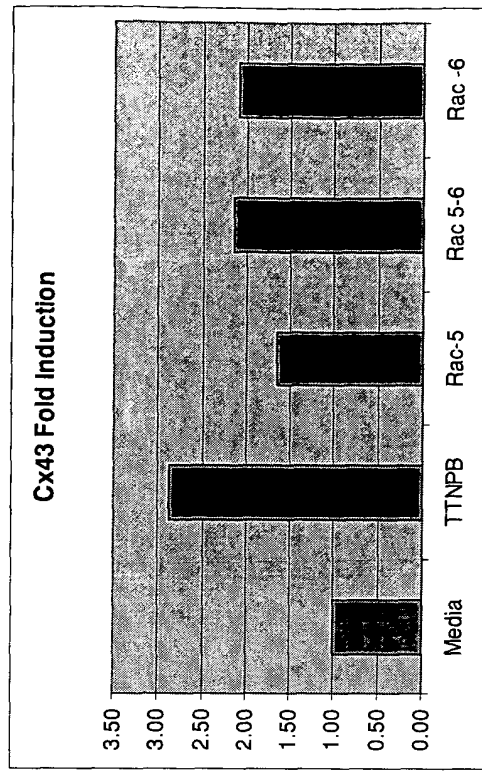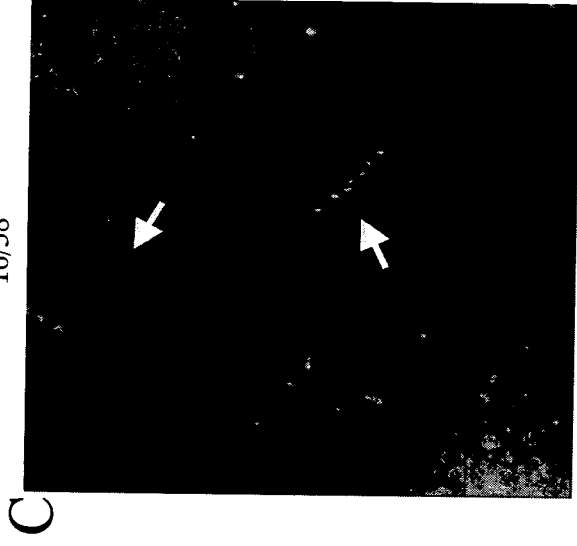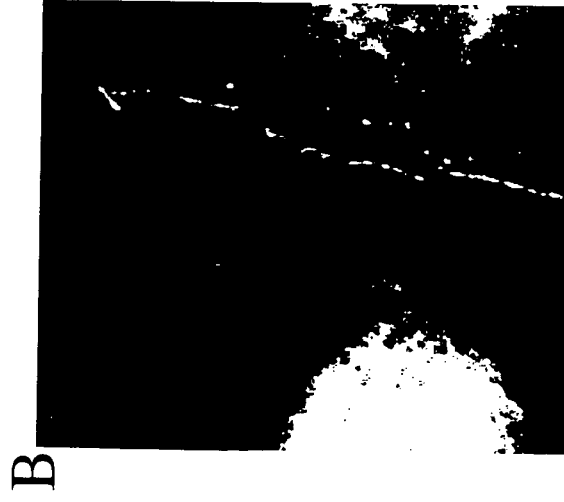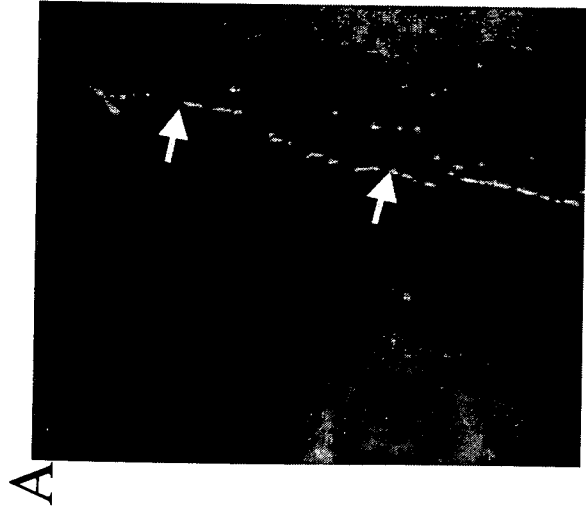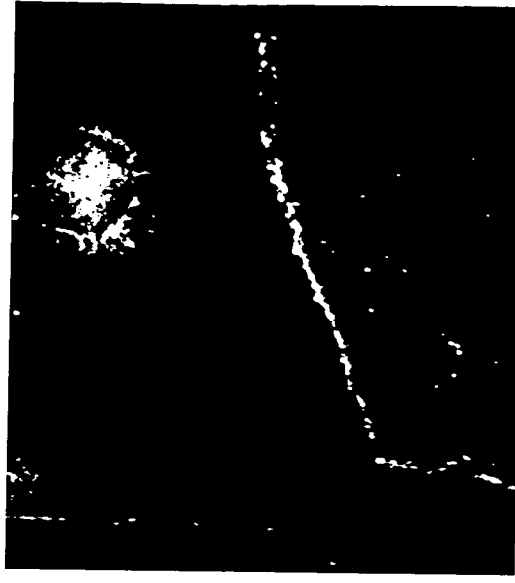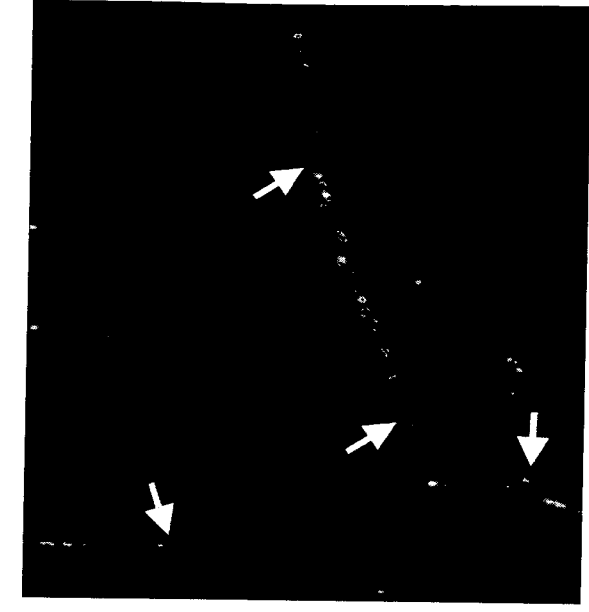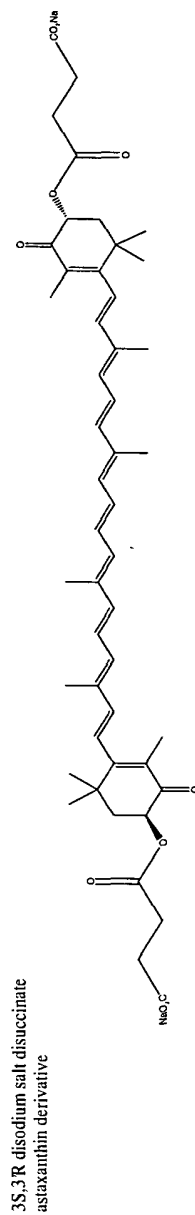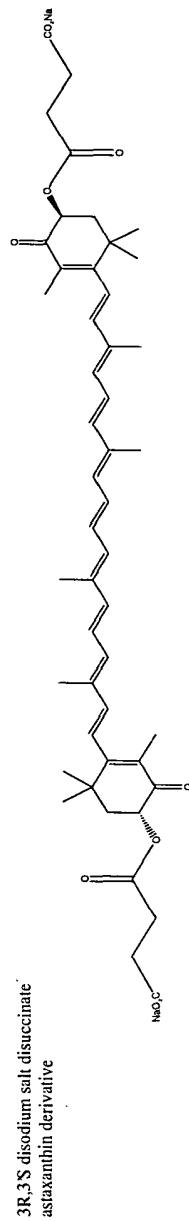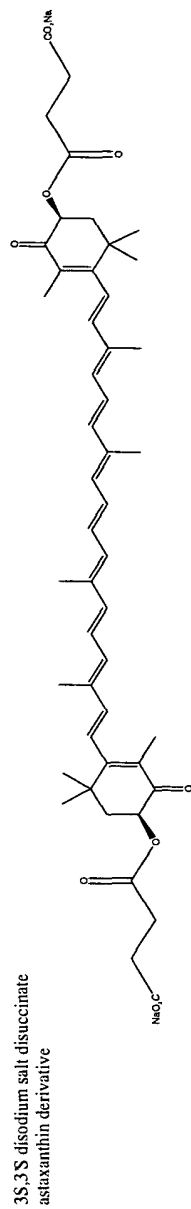
Fig. 17
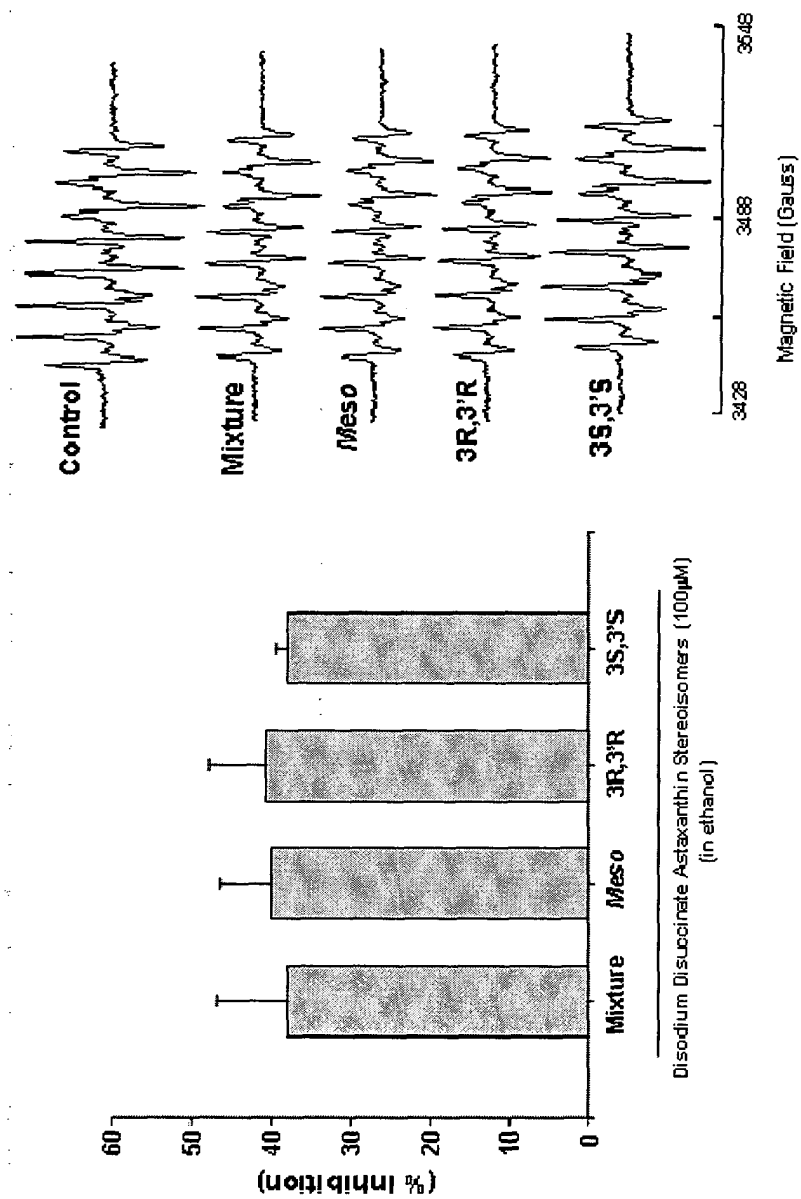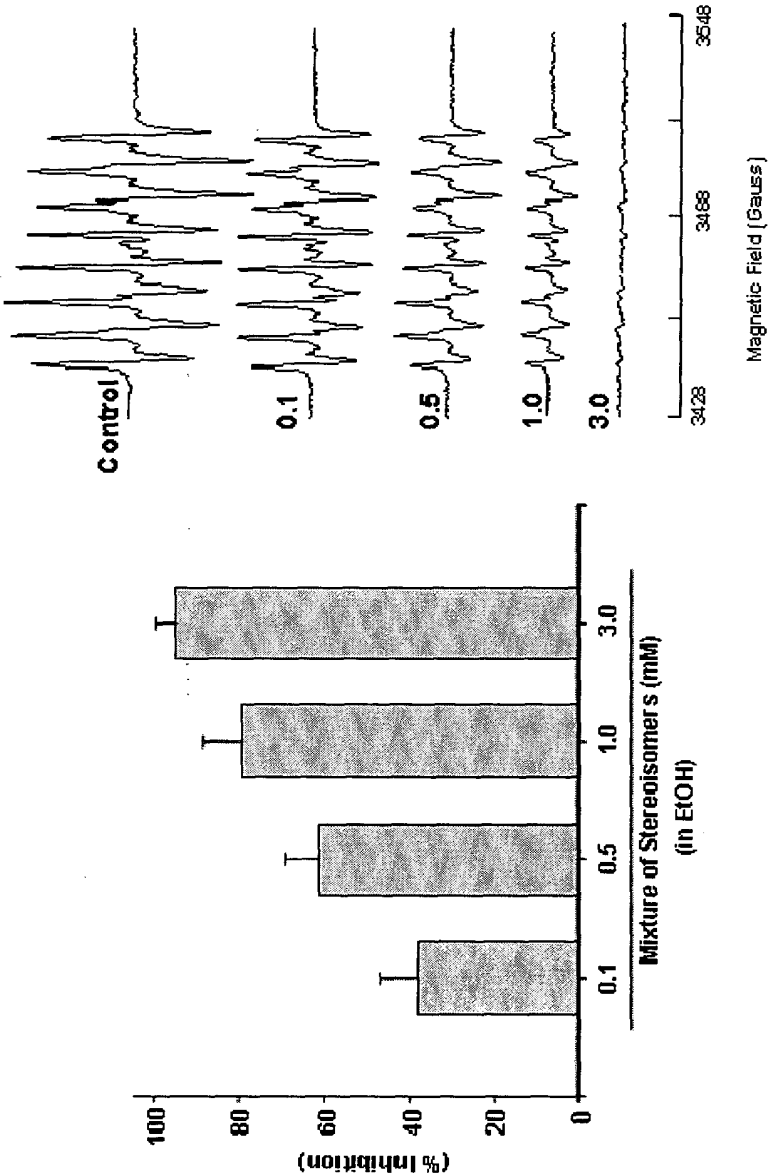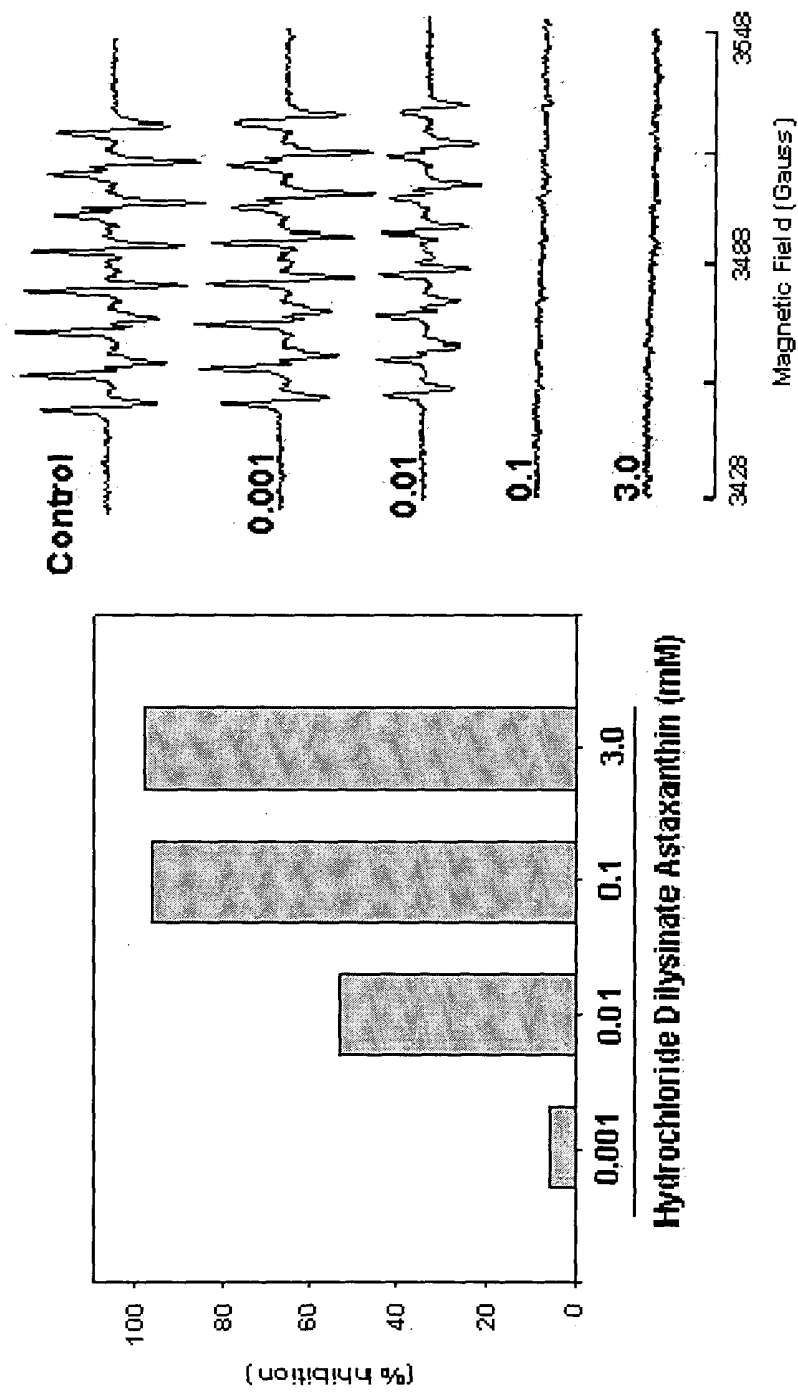
Fig. 18

Fig. 19

Fig. 20
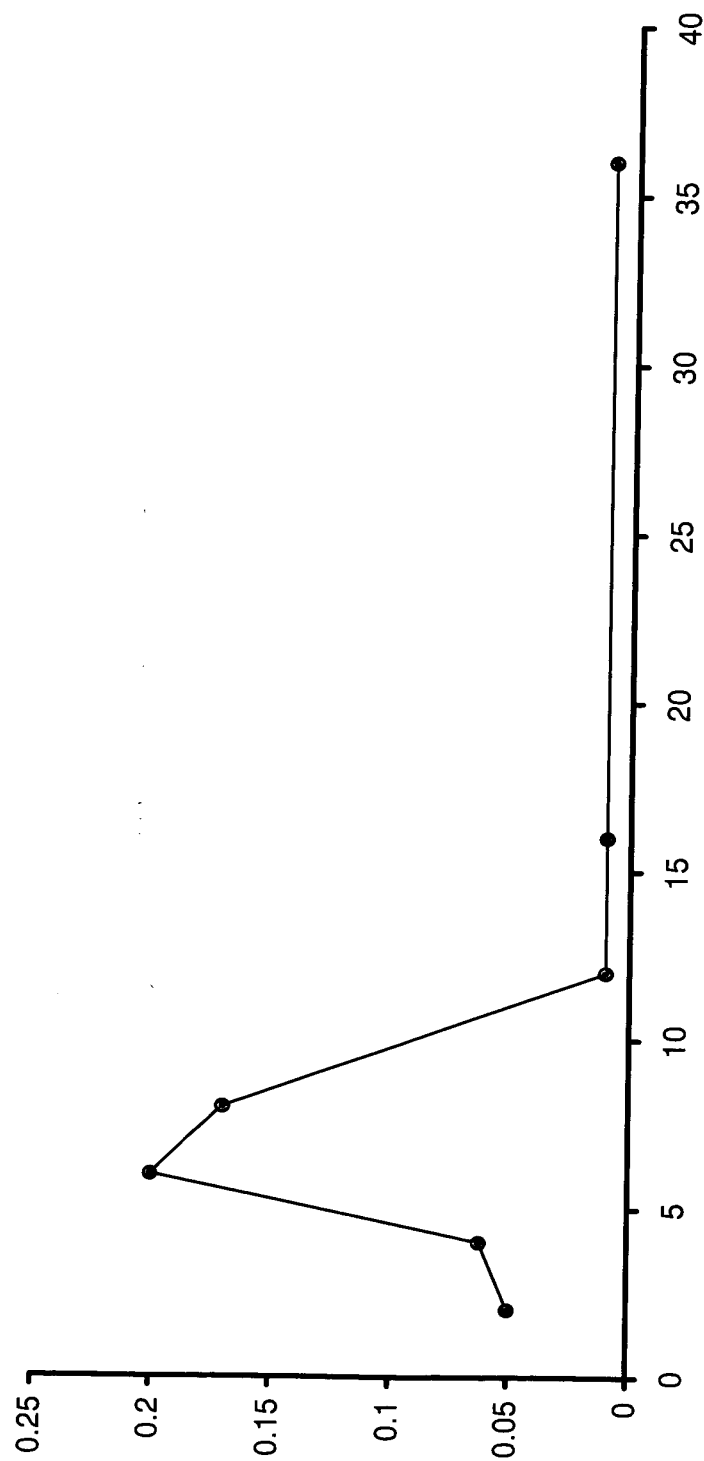
Fig. 21

Standard Plot
Concentration - Time Curve

Fig. 22

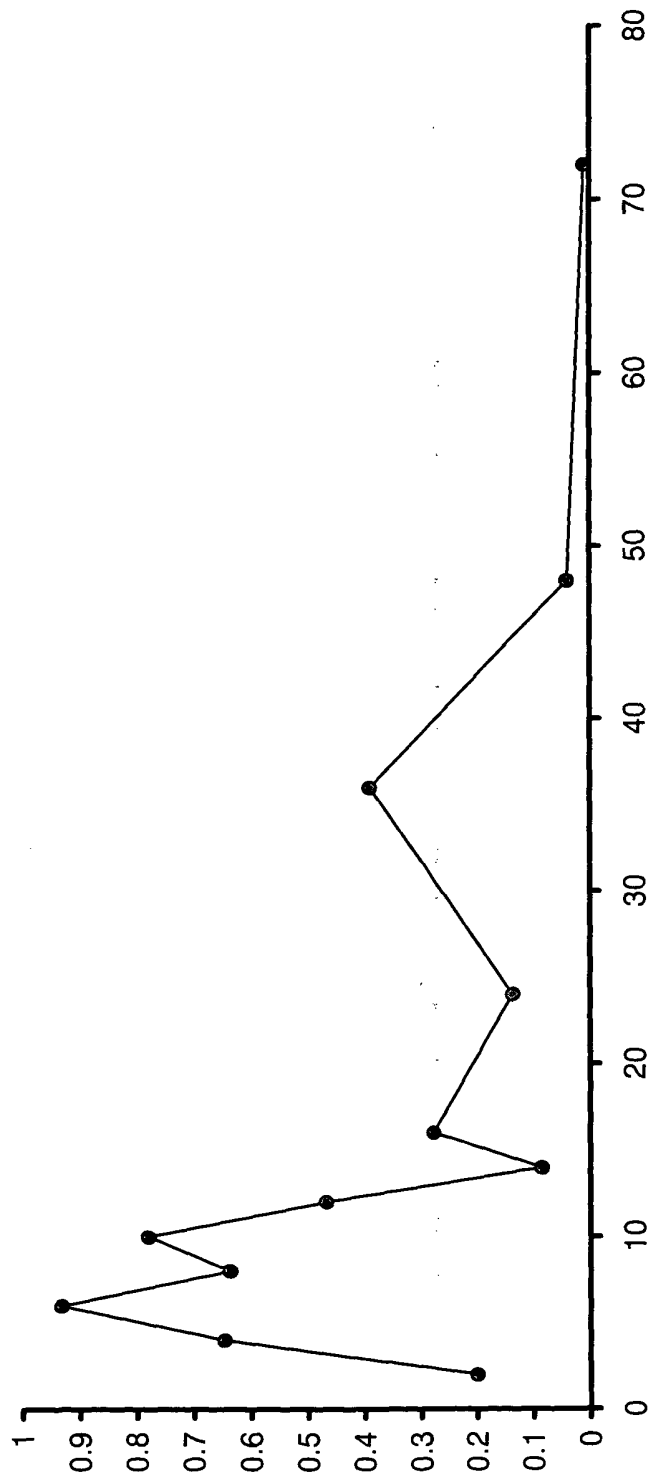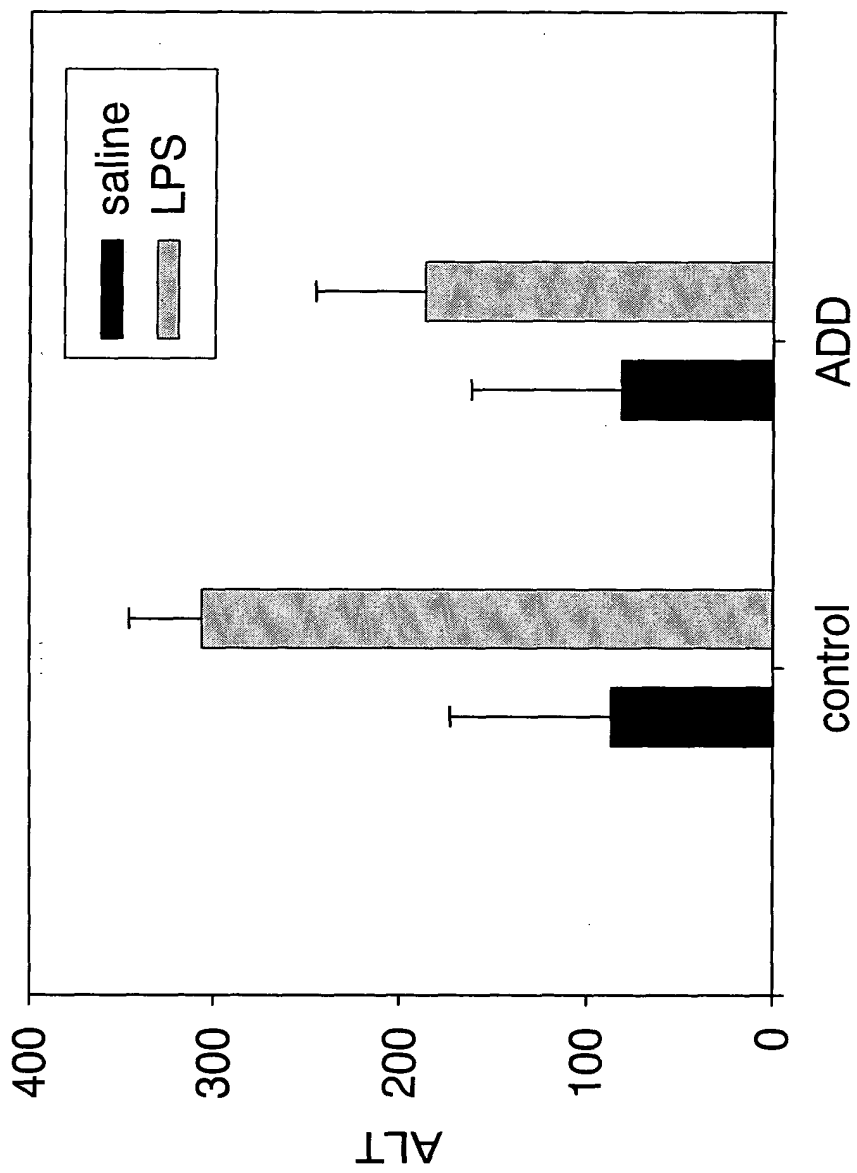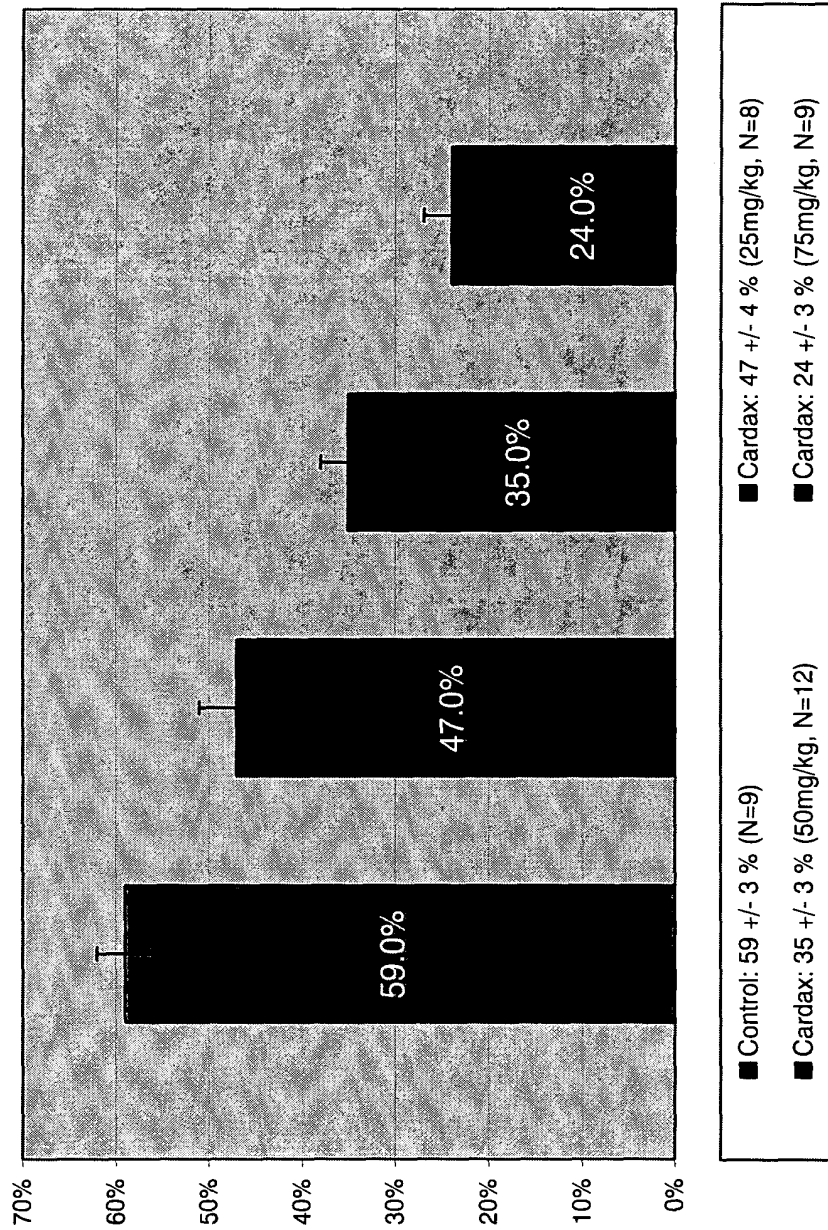Standard Plot
Concentration - Time Curve

Fig. 23

Fig. 24

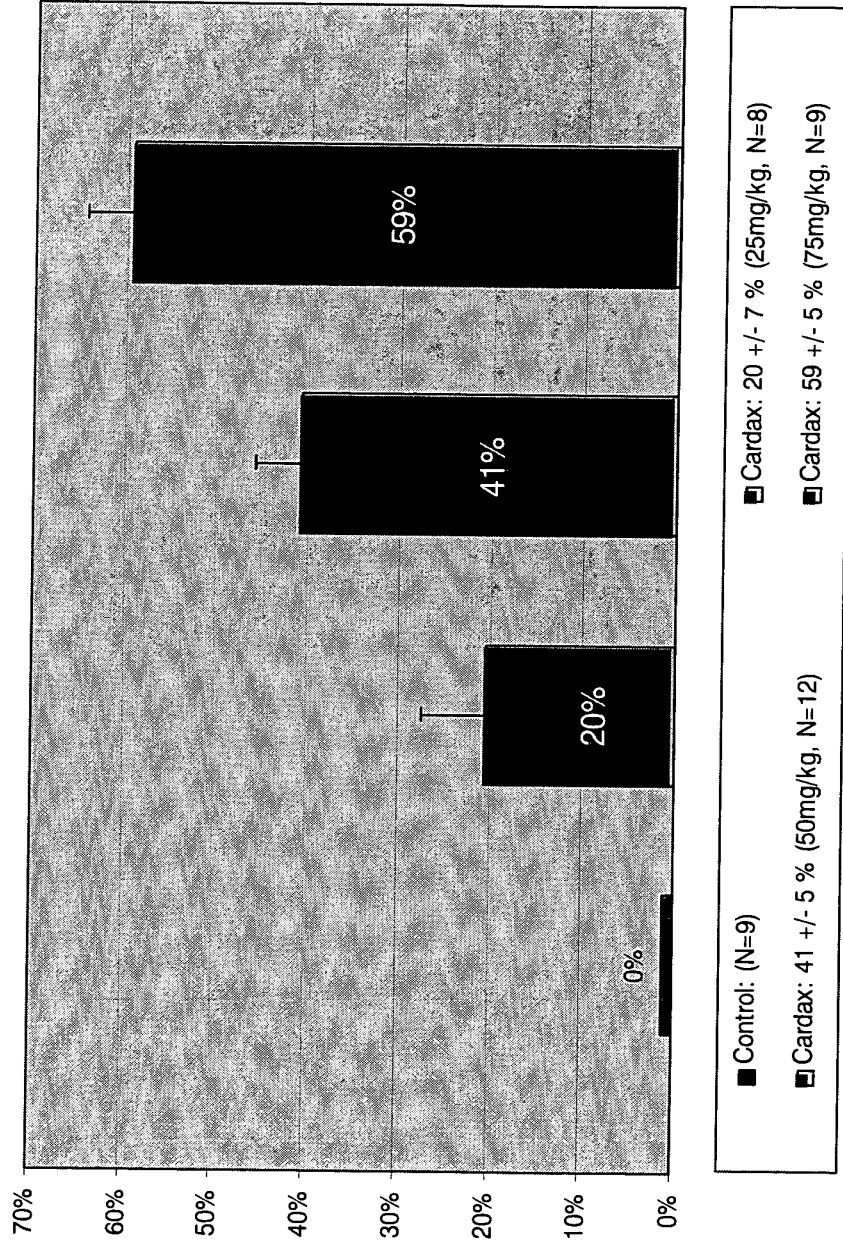# Infarct Size / Area at Risk

Legend:
- Control: 59 +/- 3 % (N=9)
- Cardax: 35 +/- 3 % (50mg/kg, N=12)
- Cardax: 47 +/- 4 % (25mg/kg, N=8)
- Cardax: 24 +/- 3 % (75mg/kg, N=9)

(P* = 0.01, unpaired t test)

Fig. 25

Infarct Size Reduction / Area at Risk

■ Control: (N=9)   ■ Cardax: 20 +/- 7 % (25mg/kg, N=8)

■ Cardax: 41 +/- 5 % (50mg/kg, N=12)   ■ Cardax: 59 +/- 5 % (75mg/kg, N=9)

(P* = 0.01, unpaired *t* test)

Fig. 26

Transient absorption spectra
of diacid-Car in MeCN

delays

5
10
15
20
25
50

Wavelength, nm

Δ-absorbance

0.09
0.06
0.03
0.00
-0.03
-0.06

400   600   800   1000

Fig. 27

Transient absorption spectra of ASTA sensitized by NN

NN and ASTA in MeCN
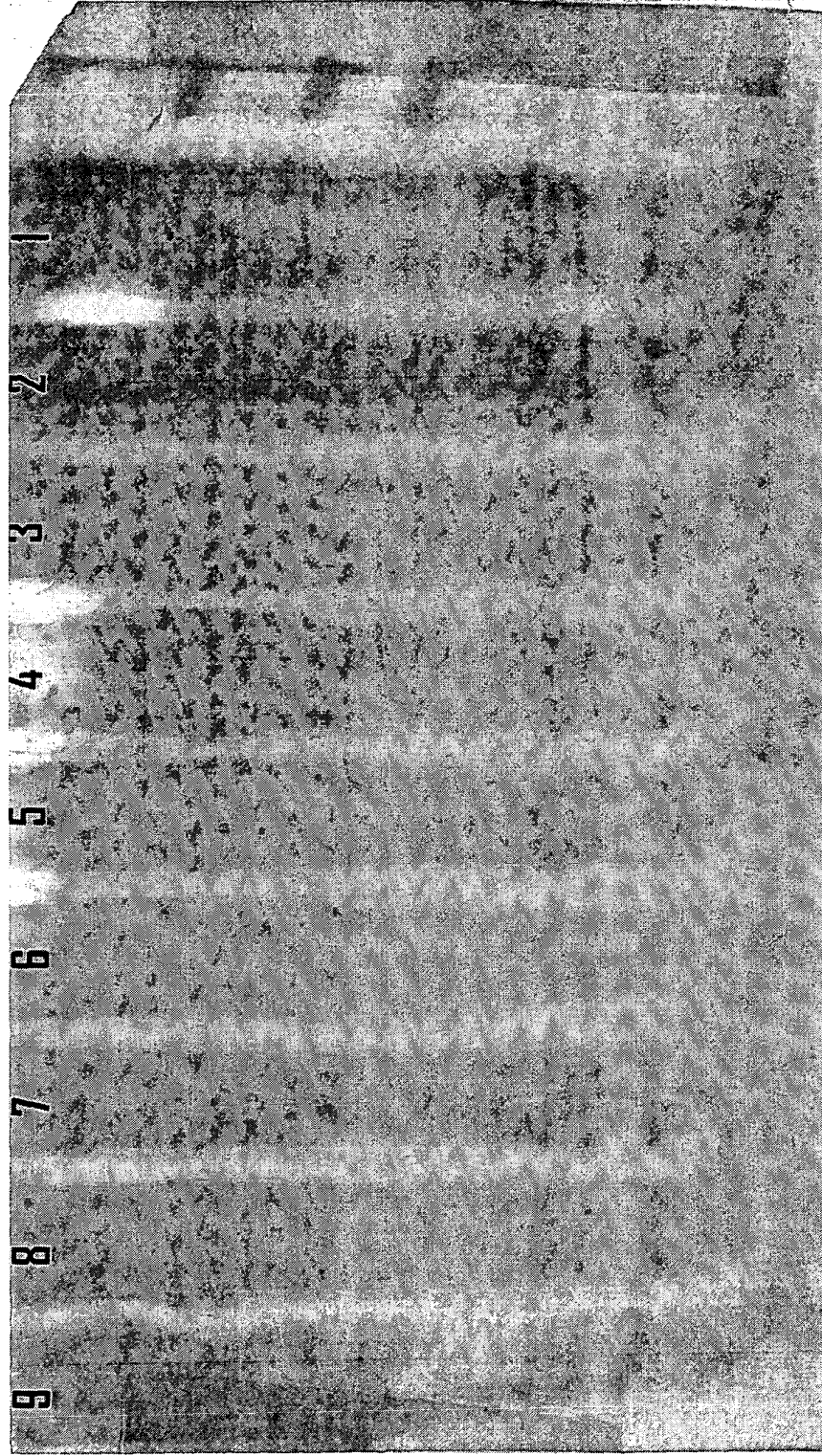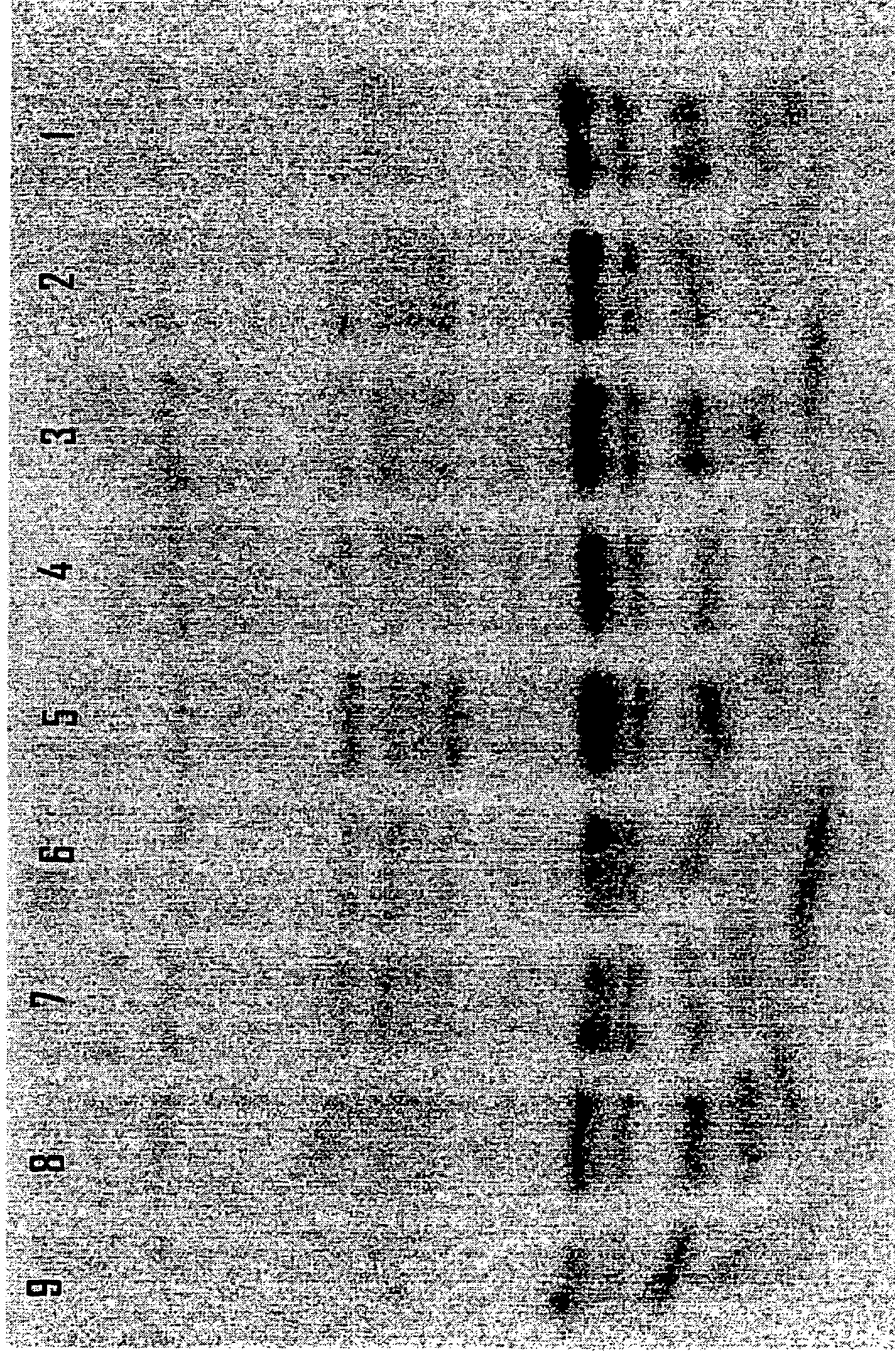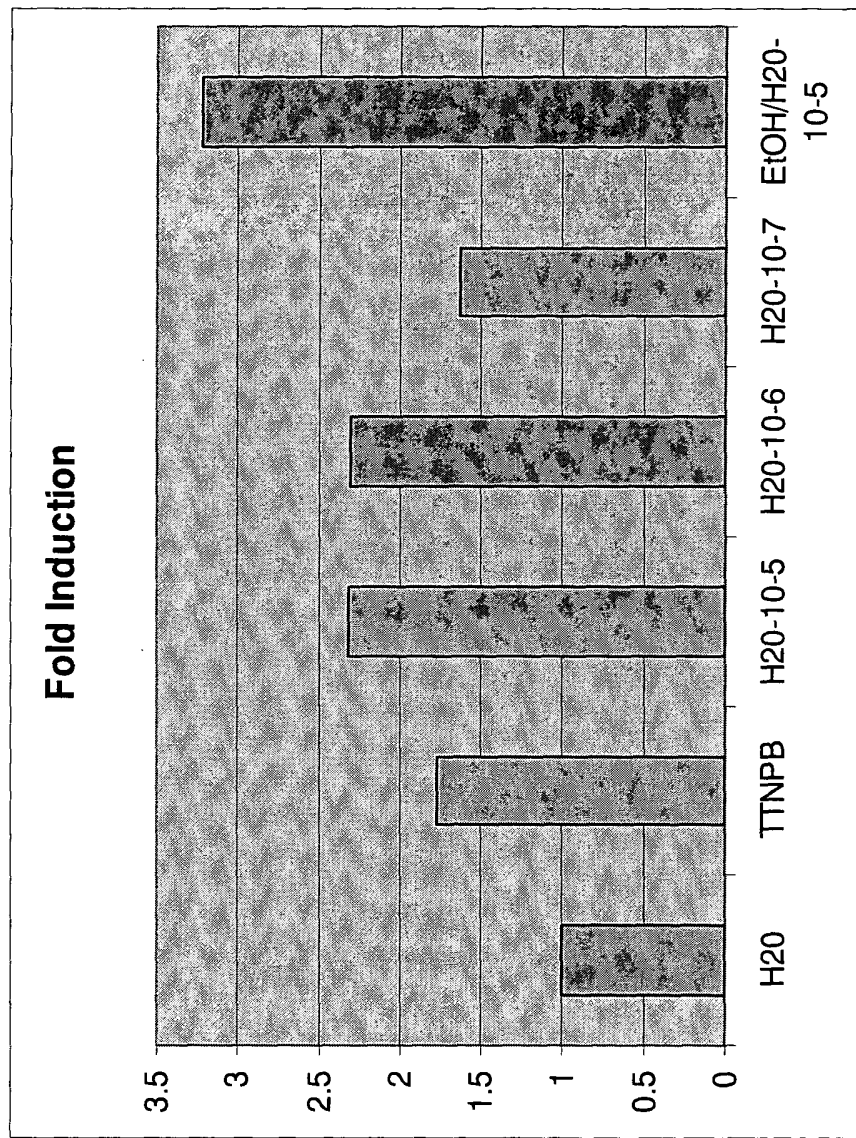
delays, ms
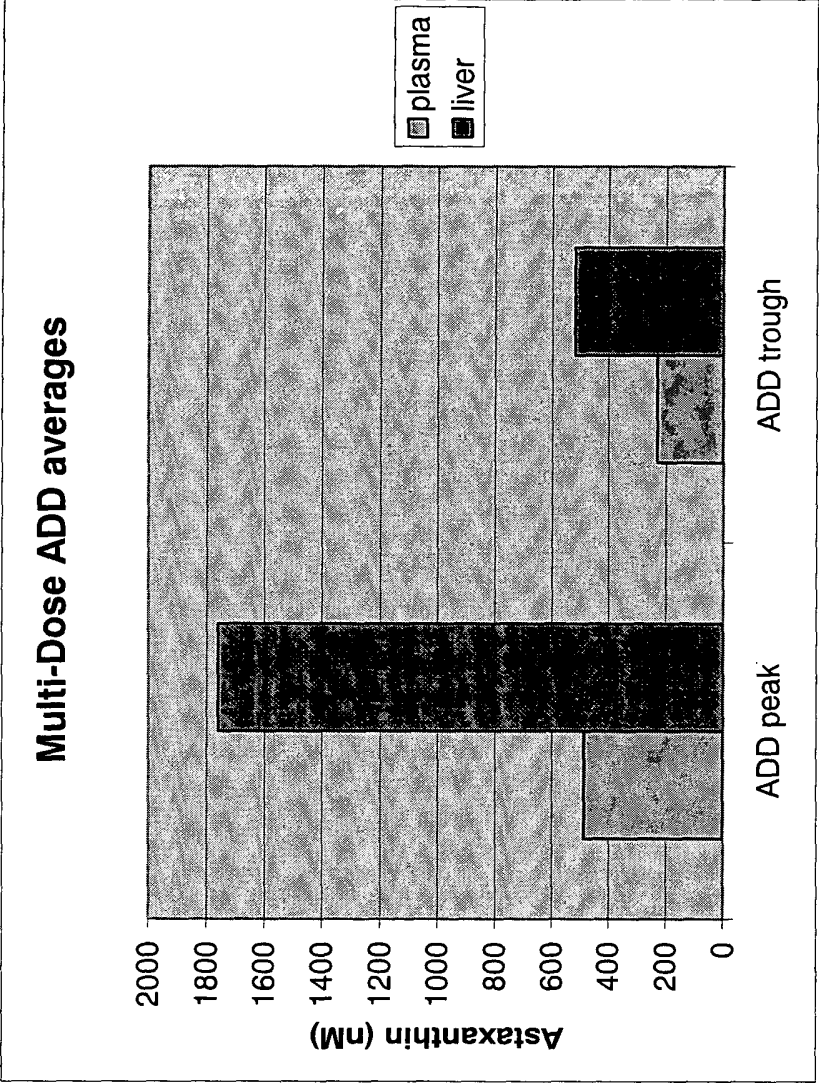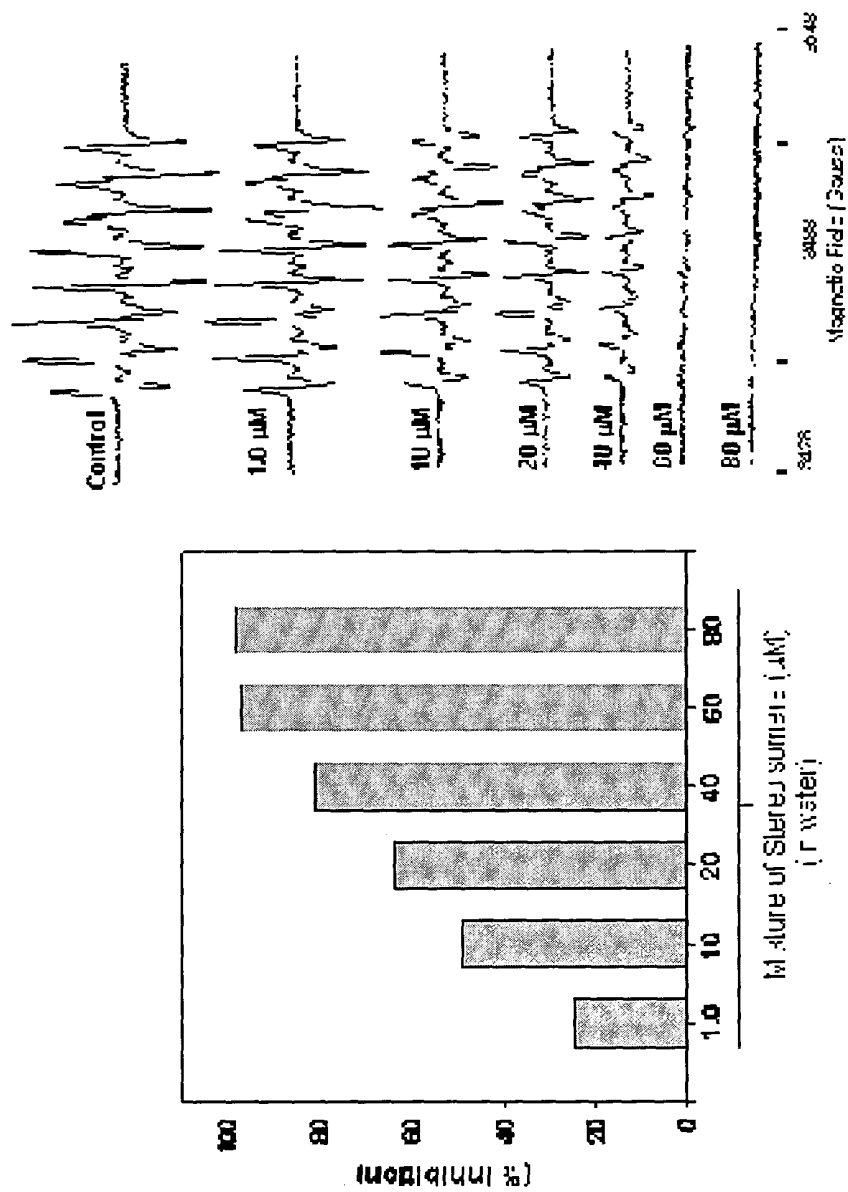5
10
15
20
30
50

Wavelength,nm
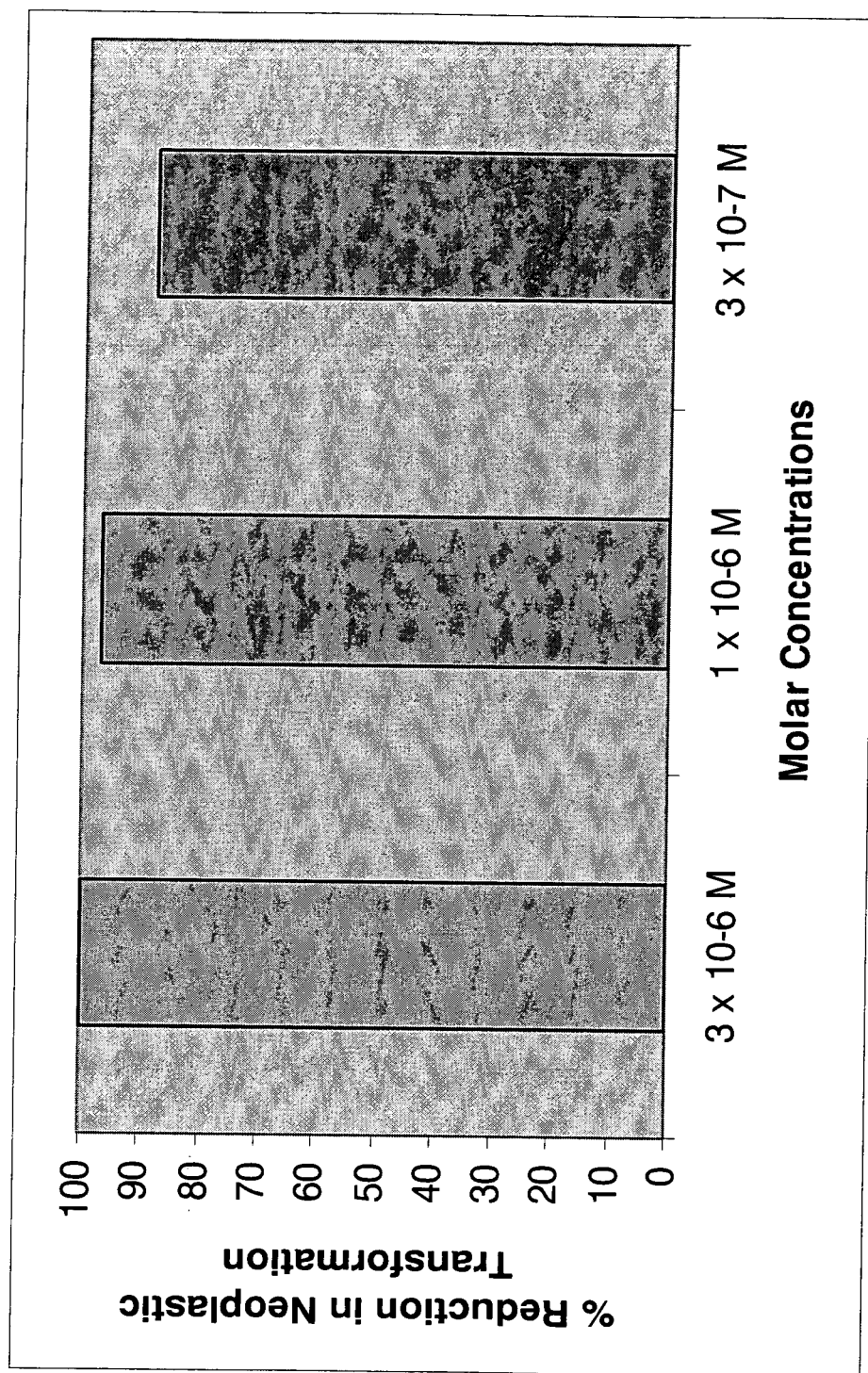
Δ-absorbance
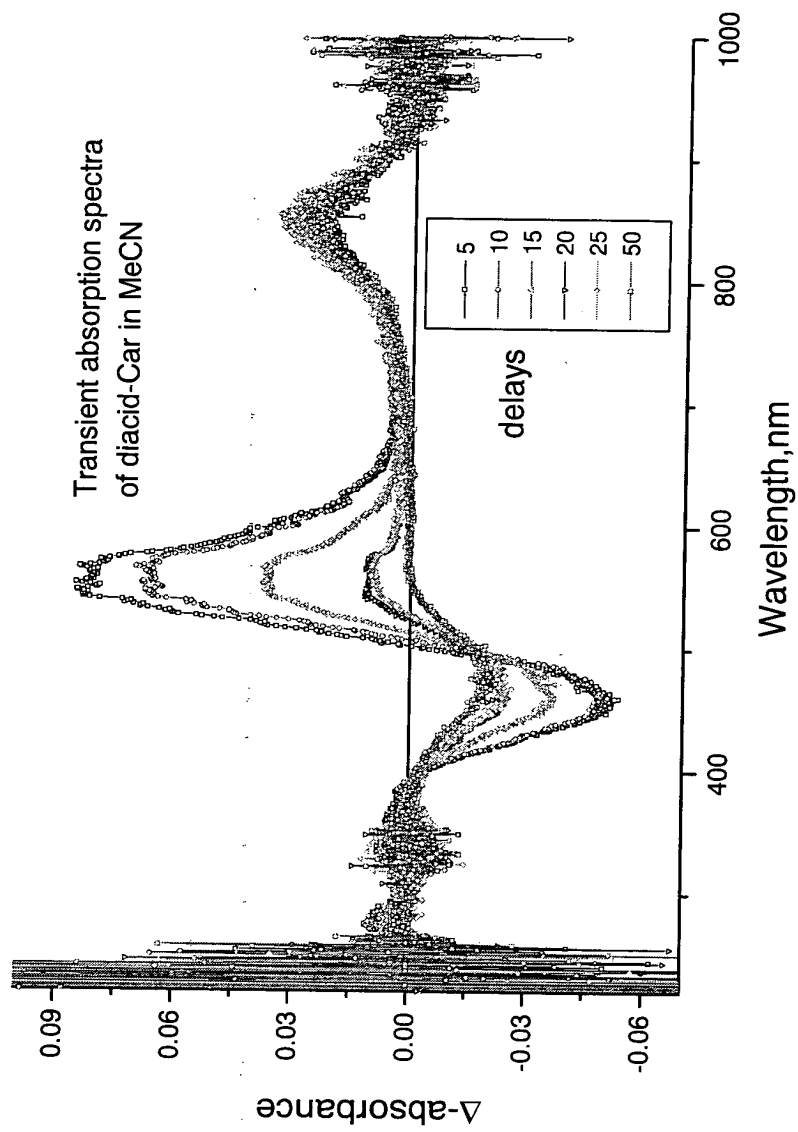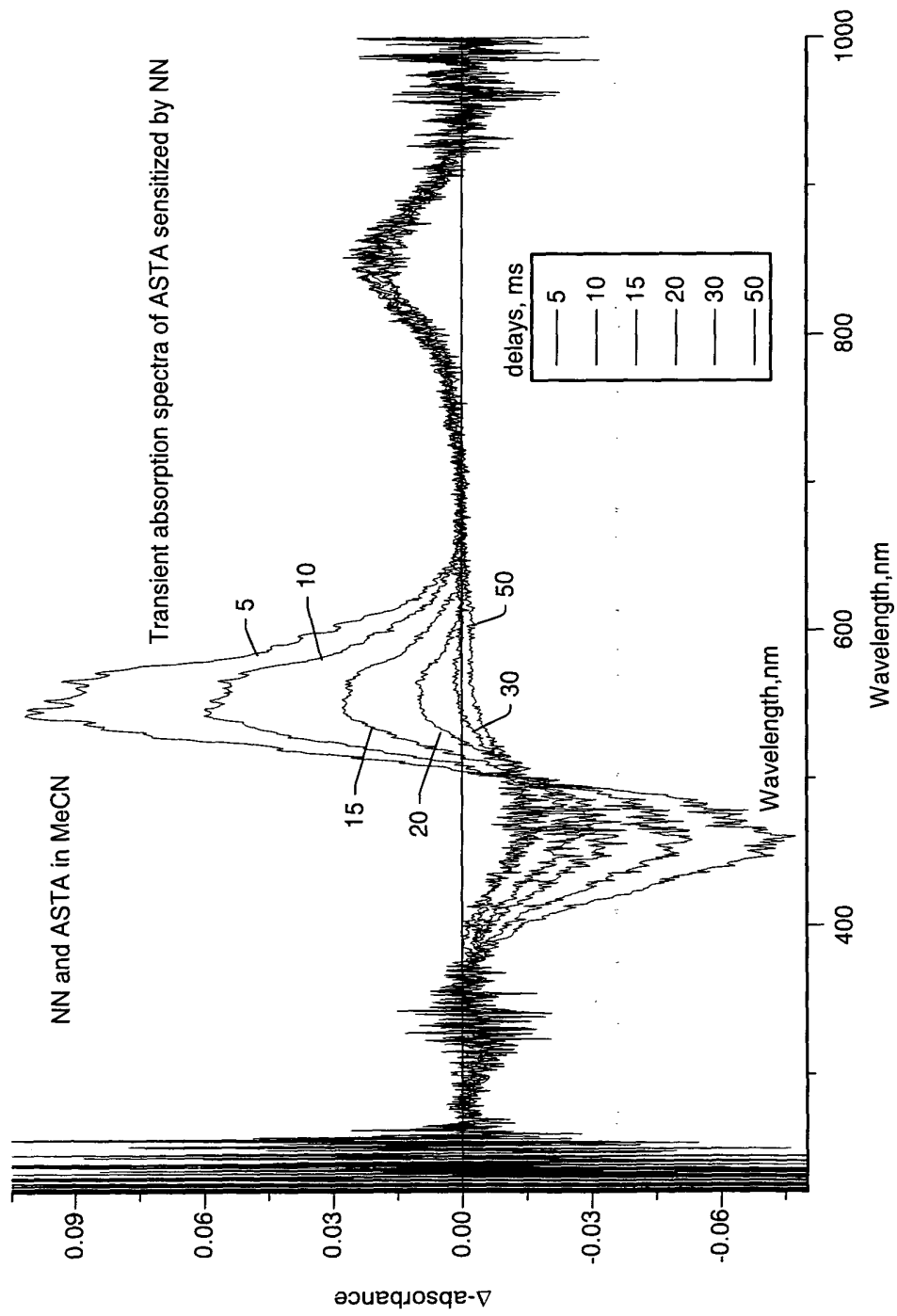
Fig. 28

Fig. 29

Fig. 30

Fig. 31

Fig. 32

Fig. 33

Fig. 34

Fig. 35

Fig. 36

Fig. 37

Fig. 38